

## ABSTRACT

The present invention provides wavelength monitoring and/or control enabling size reduction and low power  
5 operation without requiring a complicated optical system in its wavelength monitoring and controlling mechanism.

The measurement portion (1) measures temperature by a thermistor (5) in the measurement portion, and measures a bias current by using an LD drive current detecting circuit  
10 (6). The LD temperature, optical output and bias current are measured by the measurement portion. The relationship between the LD temperature and wavelengths or between the temperature, bias current and wavelengths is stored in a memory map of the storage portion (2). The central  
15 controlling portion (3) calculates wavelengths on the basis of the temperature and the bias current or the temperature information of the measurement portion, and the relationship between the LD temperature, bias current and wavelengths or between the temperature and wavelengths of  
20 the storage portion.